ROCHESTER

— Minnesota —

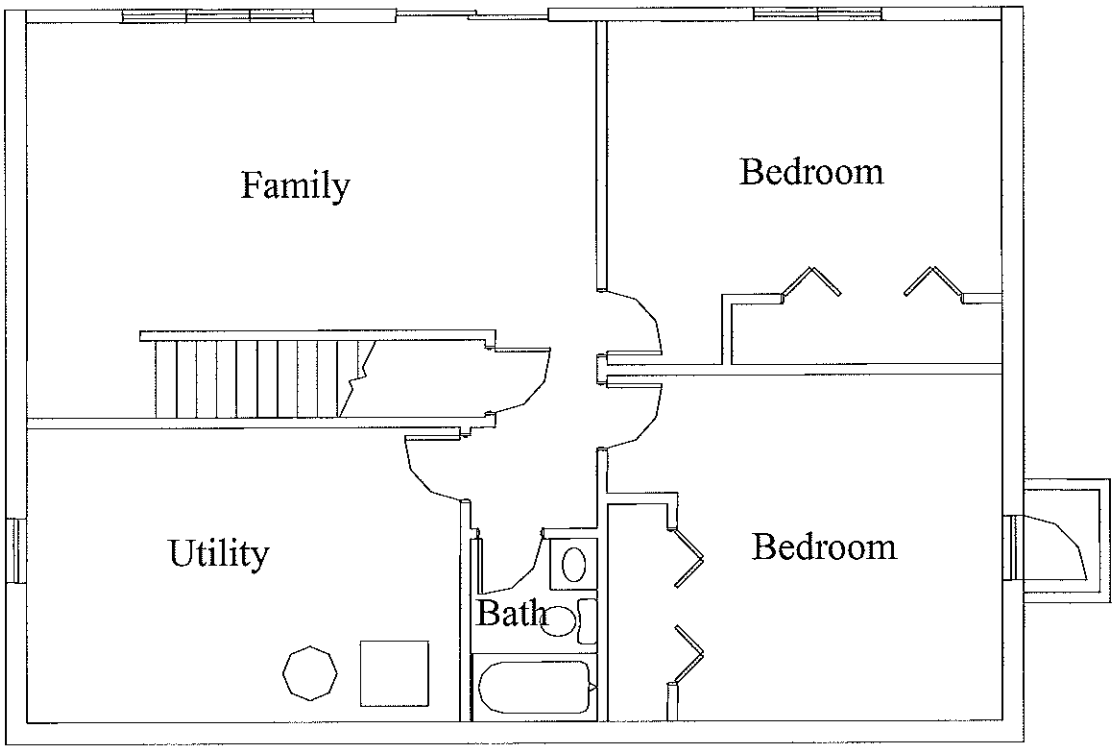
Building Safety Department

2122 Campus Drive SE Rochester, MN 55904 Phone: 507-328-2600 Fax: 507-328-2601
Office Hours: 8 am – 5 pm
www.rochestermn.gov

Basement Finish

1 & 2 Family Dwellings and Attached Single Family Dwellings

Based on the 2007 Minnesota State Building Code



MR = Minnesota State Building Code extracted from 2007 Minnesota Rules
IRC = International Residential Code
NEC = National Electrical Code

Basement Finish

Permit Requirements:

Building permits are required for a basement finish when any walls are being built, moved or altered and/or a change of use in the proposed area (Including: installing gypsum board on walls and/or ceiling). Trade permits are required if electrical, mechanical & associated ductwork, fireplace, plumbing or gas piping work is being performed. A basement finish shall meet the requirements of the 2007 Minnesota State Building Code which adopts and amends the 2006 International Residential Code.

Permit Fees:

Building permit fees are based on the value of all proposed improvements and are designed to offset the expenses of plan review and inspection services. An estimate of the permit costs may be obtained by calling the Building Safety Department.

Plan Review & Inspections:

A plan review is performed by the plans examiner prior to construction in order to identify potential problems or pitfalls that may arise. Typically the plan review for a basement finish will be performed at the counter during normal work hours, if all needed information is available. Construction inspections will be performed during the project to ensure code compliance and that the materials used are installed correctly. The plan review and inspections are not designed to be a guarantee of the work but they are performed to provide a reasonable degree of review and observation so the project will be successful, safe and long lasting.

Submittals for permit:

The following information is necessary for the Building Safety Department to do a proper plan review and to help the project go as smoothly as possible.

Note: Sample plans provided in this handout are intended as a guide only.

- Completed applications for building, electrical, mechanical, fireplace, plumbing and gas piping permits as applicable to your project.
- Two copies of the basement plan showing the following:

    1. Location & construction of new walls.
    2. Size and location of egress windows. (see emergency escape and rescue window handout)
    3. Location of plumbing fixtures, if applicable.
    4. Location of smoke alarms. (see smoke alarm handout)
    5. Location of fireplace, if applicable.
    6. Electrical plan. (See electrical handout).
    7. Ceiling Height
    8. Label Room uses (i.e. Bedroom, Bathroom, Family Room)

*Note: The Building Safety Department may have an existing drawing in the property file that can be used to create a floor plan.

Building Code Requirements:

- Basements and every sleeping room shall have at least one emergency escape and rescue opening with a sill height of not more than 44" above the floor and shall provide not less than 5.7 square feet (clear opening). See emergency escape and rescue window handout. IRC 310
- Smoke alarms shall be located in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms. Smoke alarms shall also be hardwired and have battery backup. Smoke alarms in existing areas may be solely battery operated when the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure unless there is a crawl space or basement available which could provide access for hardwiring and interconnection without removal of interior finishes. IRC 313
- Mechanical exhaust is required in bathrooms without operable windows. IRC R303.3
- Pressure treated wood sill plates must be used when in contact with concrete or masonry. IRC R319
- Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with minimum ½" gypsum board. IRC R311.2.2
- Minimum ceiling height is 7'-0" for habitable rooms, hallways, corridors, bathrooms, toilet rooms and basements. Beams and girders spaced not less than 4'-0" on center may project not more than 6" below the required ceiling height. IRC R305
- If foundation wall insulation is on the interior, a moisture barrier must be located between the insulation and the foundation wall from floor to grade. Minnesota Energy Code 7672.0600 Subp. 2E

Minnesota State Statue Requirement:

- CO (Carbon Monoxide) alarms are required in single family dwellings. CO alarms shall be located within 10 feet of each sleeping room. CO alarms shall be hardwired to electrical wiring, plugged into an outlet, or battery operated. Mn. Statue 299F.50

Required Inspections:

- **Every effort is made to perform all inspections the next business day following the request. Inspection requests must be received prior to 4:30 pm if the request is for next day service. Call 507-328-2600 to schedule an inspection. Please have your permit number available when you call. Inspectors work schedules fill up fast at certain times of the year, so if you can call more than a day in advance you may avoid any potential delays in the progress of your project.**

- **A combination inspection may be conducted for building, mechanical, and plumbing.**

1. Rough-in inspection: Prior to the framing inspection & gypsum board installation the electrical, mechanical & plumbing rough-in inspections must be scheduled.
2. Framing inspection: Prior to installation of gypsum board and after the electrical, mechanical & plumbing rough-in inspections.
3. Insulation inspection: May be performed during framing inspection.
4. Final inspection: After all work is finished.
5. Smoke alarms: During the final inspection the inspector will verify that there are smoke alarms in the proper locations in the new area as well as existing areas of the house. See smoke alarms requirements above.

General Notes:

- The plans & inspection card shall be kept on the site of the work until the final inspection has been performed and approved.
- **All contractors must be licensed by the State of Minnesota, or have a Certificate of Exemption from the State of Minnesota.**

INSPECTION GUIDELINES

ELECTRICAL INSPECTIONS:

__1. Electrical installations must be in accordance with the current National Electrical Code. See electrical handout.

PLUMBING INSPECTIONS:

__2. Plumbing installations must be in accordance with the Minnesota Plumbing Code, Minnesota Rules, Chapter 4715.

MECHANICAL INSPECTIONS:

__3. Exhaust fan must be installed in bathrooms without operable windows.

__4. Heat supplies and cold air returns must be installed in each habitable room.

__5. Fireplaces must be installed in accordance to their manufacturers listing.

__6. New gas line installations must be tested and approved for 25 psi.

__7. Mechanical installations must be in accordance with the current Mechanical Code. See attached mechanical information.

BUILDING INSPECTIONS:

__8. Exits from each bedroom: See emergency escape and rescue window handout for requirements.

__9. Smoke alarm locations (sleeping rooms, each level and basements).

__10. Enclosed usable space under stairs must be protected with min. 1/2" gypsum wallboard.

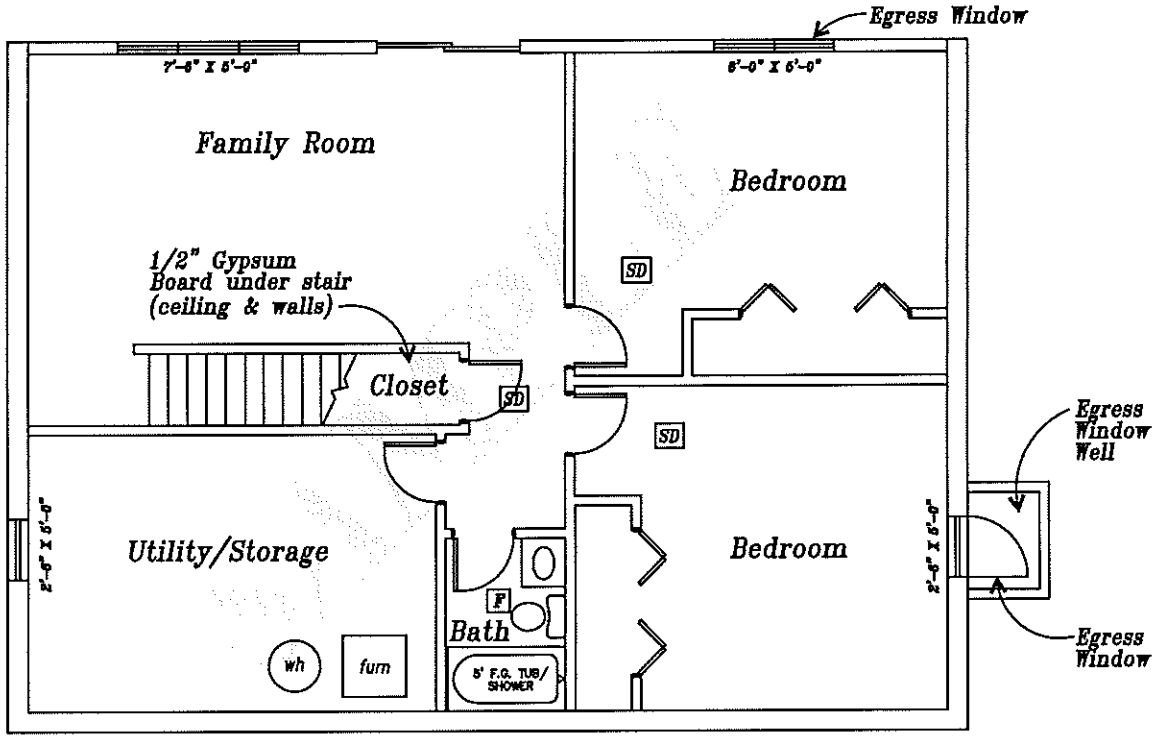
__11. Foam plastic insulation must be covered by a minimum ½"gypsum wallboard.

__12. Install moisture barrier on the warm side of an exterior wall.

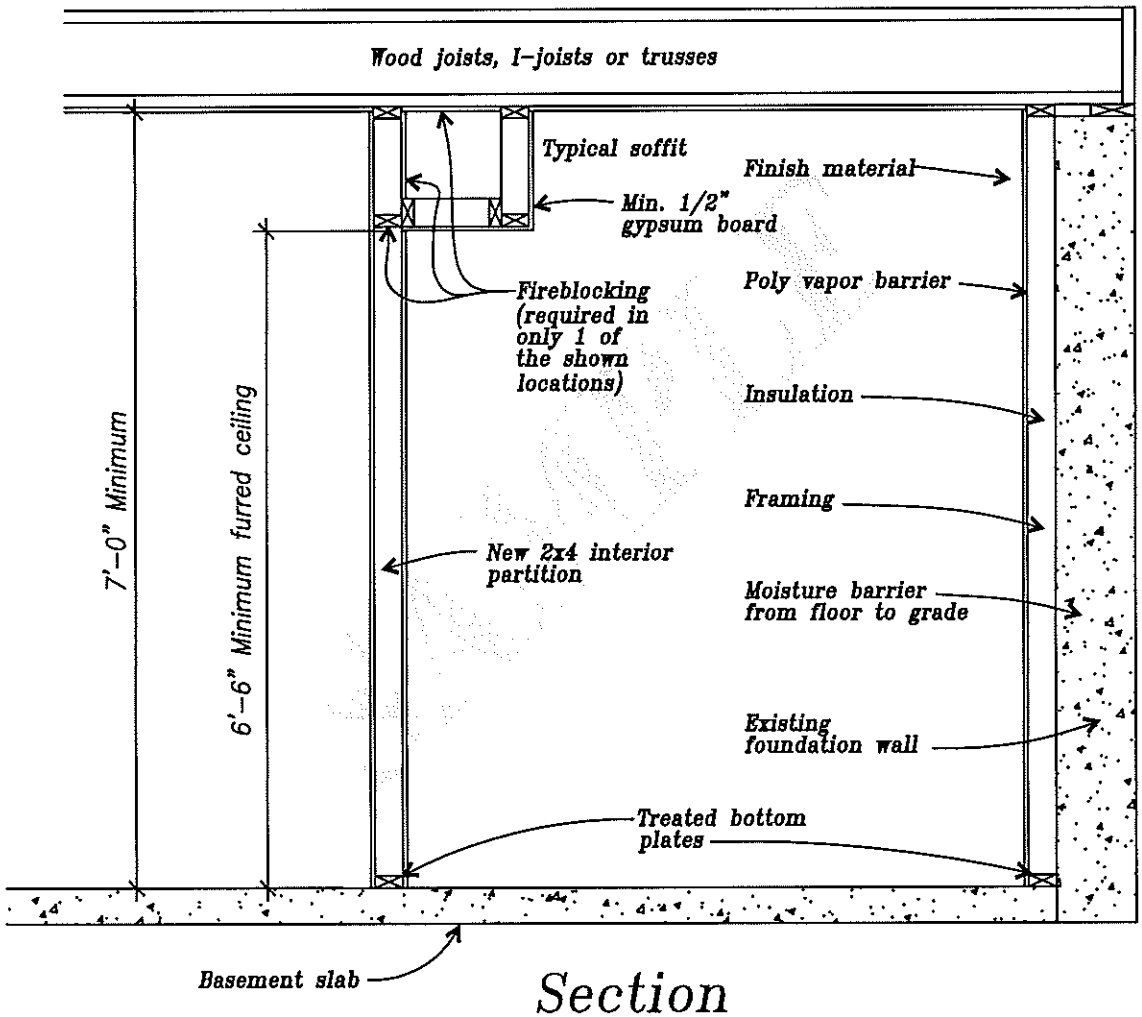
__13. Install a poly vapor barrier on the inside of the studs before gypsum board.

__14. Verify the cutting and notching of joists, beams and load bearing studs.

__15. Ceiling headroom a minimum of 7'-0".



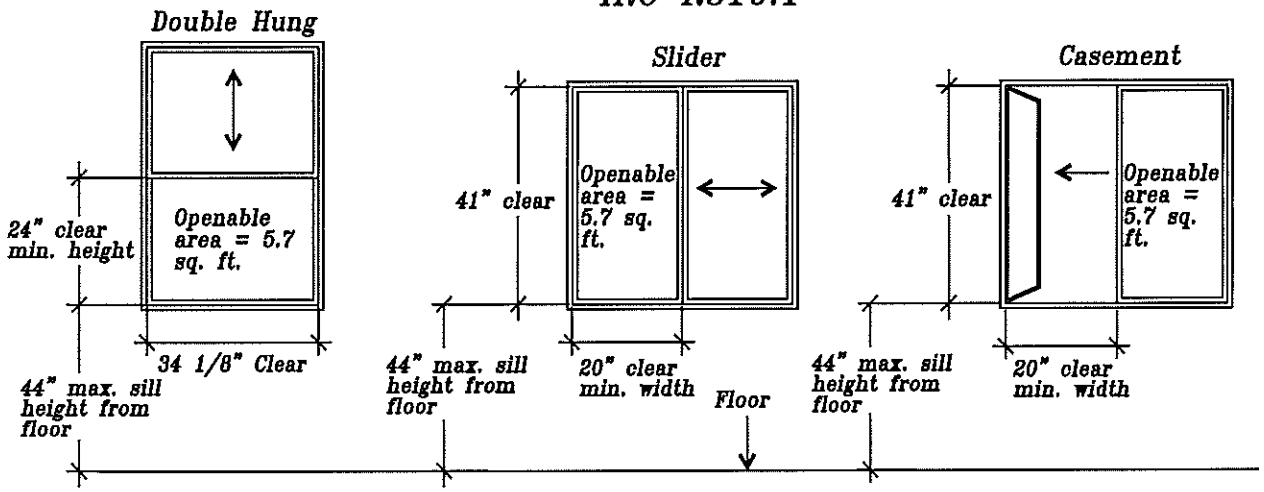
PLAN



Section

Emergency Escape & Rescue Window

IRC R310.1



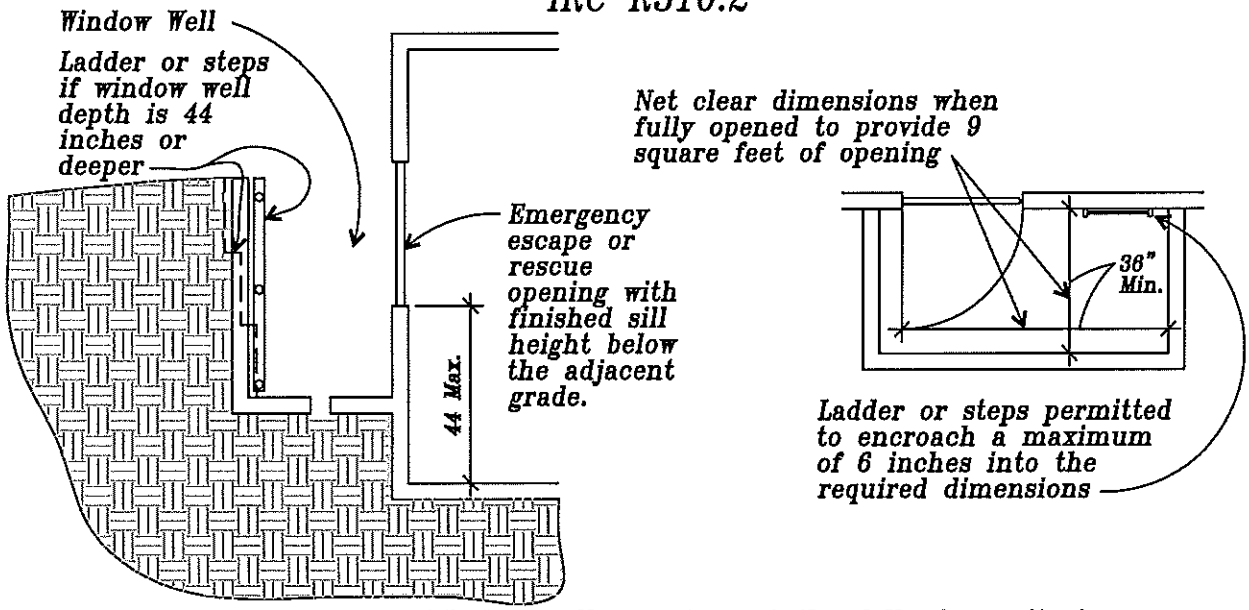
Emergency Escape and Rescue Windows must meet the following criteria:

- *A minimum total net openable area of not less than 5.7 sq.ft.(820 sq.in.)*
- *A minimum clear opening height of not less than 24"*
- *A minimum clear opening width of not less than 20"*
- *A finished sill height of not more than 44" above the floor and should be openable from the inside with normal operation and without use the use of tools, keys or effort. See rescue window detail below.*

* *Exception: Grade floor openings shall have a min. total net clear opening of 5.0 sq.ft.(720 sq.in.) Grade floor opening is a window or other opening located such that the sill height of the opening is not more than 44 inches above or below the finished ground level adjacent to the opening. See detail #1 on back.*

Emergency Escape & Rescue Window Well

IRC R310.2

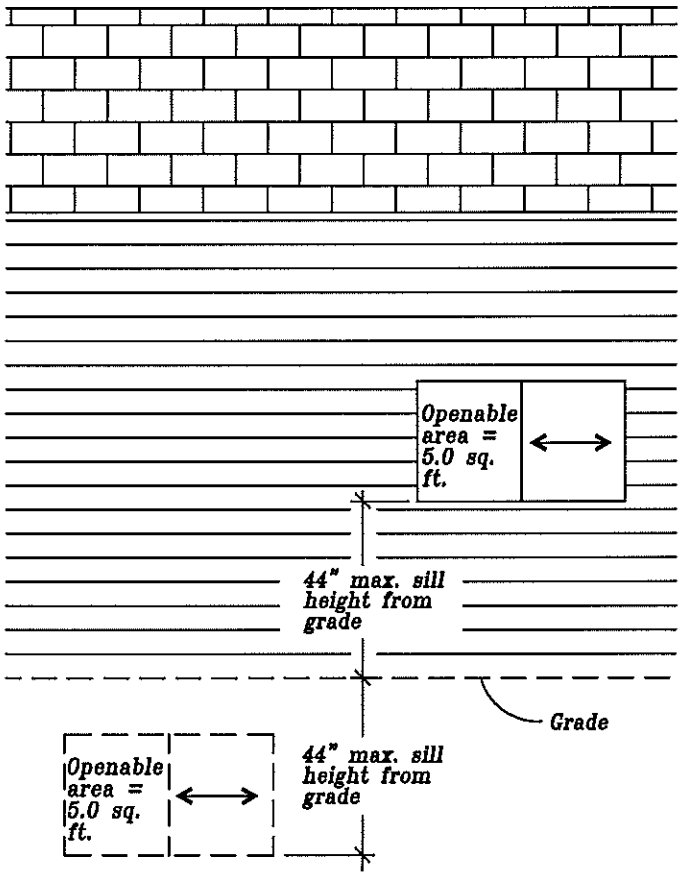


Emergency Escape and Rescue Window wells must meet the following criteria:

- *A minimum area of 9 square feet with a minimum dimension of 36" and shall enable the window to open fully.*
- *If the depth of the window well exceeds 44 inches, a permanently affixed ladder or steps must be provided. The ladder must not interfere with the operation of the window.*
- *A minimum height clearance of 36 inches shall be maintained above the exterior grade. (Example: A deck above the escape window. See detail #2 on back.)*

Emergency Escape and Rescue Grade Windows

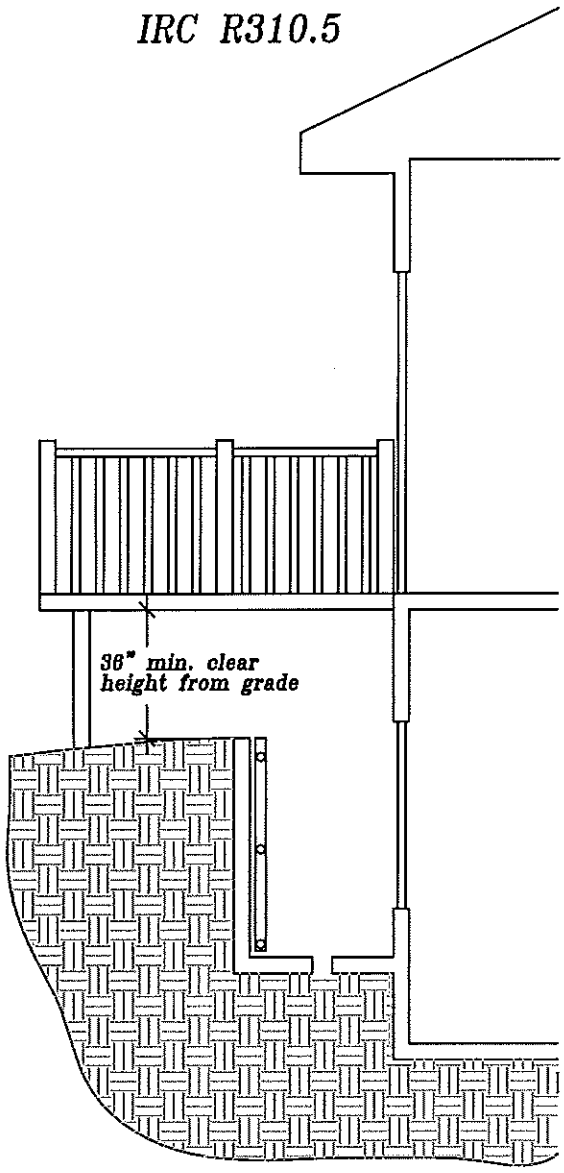
IRC R310.1



Detail 1

Emergency Escapes below Decks and Additions

IRC R310.5



Detail 2

Replacement Windows

IRC R310.1.5

Replacement Windows must meet the following criteria:

1. *The replacement window is the manufacurer's largest standard size window that will fit within the existing frame or existing rough opening. The repacement window shall be permitted to be of the same operating style as the existing window or a style that provides for a greater window opening than the existing.*
2. *The rooms are not used for any Minnesota state licensed purpose requiring an egress window.*
3. *The window is not required to be replaced pursuant to a locally adopted rental or licensing code.*

Rental Property

Replacement windows in a rental dwelling unit or Minnesota state licensed property may need to meet addtional requirements.

Mechanical Guidelines for Remodeling and Lower Level Finishes

If you intend to alter, extend or add to your existing Heating Ventilating and Air Conditioning system you will need a mechanical permit. This information is a guide to the most common questions and installation problems. It is not intended, nor shall it be considered a complete set of requirements. No installation shall be covered until the rough-in inspection is approved.

Bathrooms

Bathroom ventilation requirements - Required bathroom ventilation rates for toilet rooms and bathrooms are 50 cubic feet per minute (cfm) intermittent or 20 cfm continuous. Bathroom ventilation requirements can also be met by installing an operable window, not less than 3 square feet (1/2 of which must be open-able).

Bath fans installation requirements

- A mechanical permit is required.
- Ducting material must be an approved material. Flexible duct is allowed but must be listed and labeled class 0 or class 1 duct that is tested in accordance with UL181.
- Termination of exhaust ducting must be at least 3 feet from openings into the building. (such as non-mechanical air intakes, windows and doors)
- Exhaust fans must discharge outdoors. Termination must be equipped with a backdraft damper. (This is in addition to the damper at the fan.) Air must not be exhausted into the attic or crawl space.
- Insulation with a thermal resistance of R-3.3 and a vapor retarder with all joints sealed is required 3 feet back from the exterior joist on exhaust ducting.

Ventilation of uninhabited space

- Crawl spaces under rooms and stairways with exterior walls or installed sump baskets require mechanical ventilation of .02 cfm per square foot. This ventilation may be provided by a supply duct or a mechanical fan and humidistat.

Dryer vent

- Exhaust vents for clothes dryers shall be constructed of metal and have a smooth interior finish.
- The duct shall be a minimum size of 4".
- The maximum length shall not exceed 25 feet with a deduction of 5 feet for each 90 degree elbow. (may use specific requirements provided by dryer manufacturer)
- No screws or rivets may be used secure the duct. The interior of the pipe must have no obstructions. Dryer duct must be secured in place; joints are typically sealed with tape, tape should be marked 181A-P. (foil faced tape is approved)
- Male ends of joints shall extend in the direction of airflow.
- Transition ducts may be used to connect the appliance but must not be concealed or exceed 8 feet in length.
- Dryer duct must terminate on the outside of the building and shall be equipped with a backdraft damper. (Screens on discharge are not allowed)

Supply Ducting

- Supply duct sizing considerations include heat loss due to room size, exterior walls and floors, window and door openings to the exterior and distance from the furnace.
- Supply duct is required in all habitable space; bathrooms, closets and storage areas may not require supplies but may require ventilation.
- Rules of thumb are approximately 1 – 6" supply per 100 square feet of floor space.

Return Ducting – a return path for air back to furnace is required for the supplies to work correctly. A door restricts this path if a room does not have a return duct. For each cubic foot of air delivered to a space, a return path to the furnace is required.

- Return ducts are not allowed in kitchens and bathrooms – all other habitable space require a return path to the furnace.
- Return outlets are typically located in interior walls
- Return ducts are typically sized one size larger than the supplies, in most installations 7" round or equivalent.

Duct construction specifics – Approved supply ducts may be constructed of metal, fibrous glass or flexible air ducts, either metallic or nonmetallic. Flexible duct, both metallic and nonmetallic shall be tested in accordance with UL181 and shall be listed and labeled as Class 0 or Class 1. (Labels must be attached to duct and visible at the time of inspection) Return ducts may use the above materials, as well as; stud wall cavities and the spaces between solid floor joists. Construction is required to be substantially airtight. Note: Conversion or alteration of existing spaces may require additional combustion and/or makeup air and verification of proper operation.

Fireplaces – factory built

- The installation of a gas fireplace requires a separate permit. This permit includes the fireplace and the associated gas line to this appliance only. Installation of the fireplace and gas line is required at the rough- in inspection.
- The installation must conform to manufacturer's instructions and these instructions must be available at the time of inspection.
- It is strongly advised that instructions be read and understood before installation of fireplace begins. Most inspection failures are as a result of not reading or understanding the instructions.
- Outside wall construction should be weather-tight and complete before the appliance is set.
- At the time of the rough-in inspection, the appliance must be set and vented; in addition, framing, draft, and fire stopping must be installed. Rough-in inspection is required prior to installation of sheetrock or plywood.
- Gas piping to the appliance should be installed and visible at the time of the rough in inspection of the fireplace.
- Gas piping must be of approved materials and installation methods.
- Corrugated Stainless Steel Tubing (CSST) installations must follow manufacturer's installation instructions for the specific brand of CSST installed.
- CSST installations require a qualified installer. (Certification is available to homeowners)
- A 25# air pressure test is required on all newly installed gas lines before final connection to the house gas distribution system. This can be achieved by closing gas valves and/or capping and isolating the line from the house gas supply and the appliance regulator. (Under no circumstances should pressure be applied to the appliance regulator or the house distribution system.)
- CSST installation also requires bonding as detailed in the specific manufacture's installation instructions.
- Final inspections require all finish materials be installed; including mantel, gas line connected, and any related electrical, if applicable. Instructions must be available at the final inspection.